

WHAT IS CLAIMED IS:

1. An electronic control unit comprising:

5 a connector having a lateral surface, a longitudinal surface opposite to the first surface, and a pair of first inclined portions connecting the lateral surface and longitudinal surface, at least one of said first inclined portions being inclined with respect to the first surface at a first angle;

10 a case having a peripheral side portion formed with a concave groove in which the connector is fitted with a clearance portion therebetween, said concave groove comprising a base surface opposite to the lateral surface of the connector; and a pair of second inclined portions opposite to the first inclined portions, respectively, at least one of said second inclined portions opposite to the at least one of said first inclined
15 portions being inclined with respect to the base surface at a second angle, said second angle being larger than the first angle; and

a seal member disposed in the clearance portion between the connector and the concave groove of the case, said seal member sealing the clearance portion therebetween.

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2. An electronic control unit according to claim 1, wherein each of said first inclined portions is inclined outwardly with respect to the first surface at the first angle, and each of said second inclined portions is inclined outwardly with respect to the base surface.

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3. An electronic control unit according to claim 1, wherein a

difference between said first angle and said second angle is equal to 1 degree or more.

4. An electronic control unit according to claim 1, wherein said
5 connector has a chamfered portion that is formed by chamfering a corner portion formed between at least one end of the longitudinal surface and at least one of the first inclined portions that is connected to the at least one end of the longitudinal surface.

10 5. An electronic control unit according to claim 4, wherein said chamfered portion extends from the at least one end of the longitudinal surface toward the at least one of the first inclined portions to be substantially orthogonal to the longitudinal surface.

15 6. An electric control unit according to claim 4, wherein at least one of said second inclined portions opposite to the at least one of the first inclined portions has one and other end portions, said one end portion of the at least one of second inclined portions is connected to the base surface, and said other end portion of the at least one of second inclined
20 portions is opposite to the chamfered portion and is parallel thereto.

7. An electric control unit according to claim 1, wherein a first compressibility of a part of the seal member that is adjacent to the longitudinal surface of the connector in a surface direction thereof is equal
25 to or less than a second compressibility of a part of the seal member that is adjacent to the lateral surface of the connector in the surface direction.

8. An electric control unit according to claim 1, wherein said connector is made of a material having a linear expansion coefficient, said clearance portion includes a clearance formed between each first inclined
5 portion of the connector and each second inclined portion of the case and positioned parallelly in adjacent to the lateral surface of the connector is represented as S1 and a clearance formed between each first inclined portion of the connector and each second inclined portion of the case and positioned parallelly in adjacent to the longitudinal surface of the
10 connector is represented as S2, a length of the lateral surface of the connector is represented as C1, a length of the longitudinal surface of the connector is represented as C2, the linear expansion coefficient of the material of the connector is represented as α , a temperature of the connector is represented as T, wherein said parameters S1, S2, C1, C2, α ,
15 and T are satisfied with a relationship thereamong defined by the following equation:

$$((\alpha T \cdot C1 - C1)/2)/S1 \geq ((\alpha T \cdot C2 - C2)/2)/S2$$

9. An electric control unit according to claim 1, wherein said case
20 is made of a first material having a first linear expansion coefficient, said connector is made of a second material having a second linear expansion coefficient, and said first and second linear expansion coefficients are different from each other.

25 10. An electric control unit according to claim 9, wherein said second linear expansion coefficient is larger than the first linear expansion

coefficient.

11. An electronic control unit comprising:

5 a connector having a lateral surface, a longitudinal surface opposite to the lateral surface, and a pair of first inclined portions connecting the lateral surface and longitudinal surface;

a case having a peripheral side portion formed with a concave groove in which the connector is fitted with a clearance portion therebetween, said concave groove comprising a base surface opposite to
10 the lateral surface of the connector; and a pair of second inclined portions opposite to the first inclined portions, respectively; and

a seal member disposed in the clearance portion between the connector and the concave groove of the case, said seal member sealing the clearance portion therebetween,

15 wherein a first clearance formed between each first inclined portion of the connector and each second inclined portion of the case and positioned parallelly in adjacent to the longitudinal surface of the connector is wider than a second clearance formed between each first inclined portion of the connector and each second inclined portion of the
20 case and positioned parallelly in adjacent to the lateral surface of the connector.

12. An electric control unit according to claim 11, wherein said case is made of a first material having a first linear expansion coefficient,
25 said connector is made of a second material having a second liner expansion coefficient, and said first and second linear expansion

coefficients are different from each other.

13. An electric control unit according to claim 12, wherein said
second linear expansion coefficient is larger than the first linear expansion
5 coefficient.

14. An electronic control unit comprising:
a connector having a lateral surface, a longitudinal surface
opposite to the first surface, and a pair of first inclined portions
10 connecting the lateral surface and longitudinal surface;

a case having a peripheral side portion formed with a concave
groove in which the connector is fitted with a clearance portion
therebetween, said concave groove comprising a base surface opposite to
the lateral surface of the connector; and a pair of second inclined portions
15 opposite to the first inclined portions, respectively, at least one of said
inclined portions being formed with at least partially a plurality of stepped
portions over an inclination direction of the at least one of the inclined
portions; and

a seal member disposed in the clearance portion between the
20 connector and the concave groove of the case, said seal member sealing
the clearance portion therebetween.

15. An electric control unit according to claim 14, wherein each
of said stepped portions has a corner with an angle of approximately 90
25 degrees and over.

16. An electric control unit according to claim 14, wherein said case is made of a first material having a first linear expansion coefficient, said connector is made of a second material having a second linear expansion coefficient, and said first and second linear expansion
5 coefficients are different from each other.

17. An electric control unit according to claim 16, wherein said second linear expansion coefficient is larger than the first linear expansion coefficient.

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